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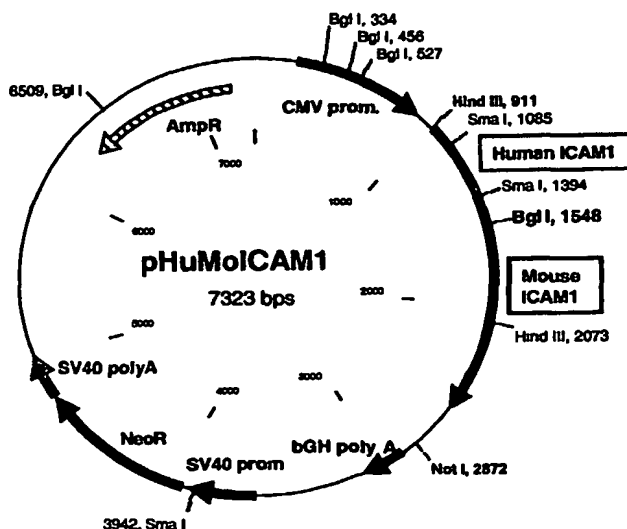
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GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: TRANSGENIC ANIMAL MODELS OF HRV WITH HUMANI ICAM-1 SEQUENCES

Map of pHuMoICAM-1:  
(Human- Mouse chimeric ICAM1 cDNA in pcDNA3.1+)



(57) Abstract: A transgenic non-human animal  
whose genome comprises a polynucleotide encoding  
human ICAM-1 domains D1 and D2 and preferably  
encoding human ICAM-1 domains D1 and D2  
and host non-human ICAM-1 domains D3, D4 and  
D5. Methods for the production of such transgenic  
animals, screening methods using such transgenic  
animals, associated transgenes, constructs, vectors,  
and cells are disclosed. The transgenic non-human  
animal is a suitable model for studying human  
rhinovirus infection.



**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP 03/07939

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/00 A01K67/027 C07K14/705 C12N15/62 C12N5/10  
G01N33/50

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N A01K C07K G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	STAUNTON DE, GAUR A, CHAN PY, SPRINGER TA.: "Internalization of a major group human rhinovirus does not require cytoplasmic or transmembrane domains of ICAM-1" JOURNAL OF IMMUNOLOGY, vol. 148, no. 10, 15 May 1992 (1992-05-15), pages 3271-3274, XP002271629 cited in the application	19,25
Y	page 3272, column 1, paragraph 5 ----- -/--	1-18

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*&\* document member of the same patent family

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12/03/2004

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International Application No  
PCT/EP 03/07939

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	TALLONE T, MALIN S, SAMUELSSON A, WILBERTZ J, MIYAHARA M, OKAMOTO K, POELLINGER L, PHILIPSON L, PETTERSSON S: "A mouse model for adenovirus gene delivery." PROC NATL ACAD SCI U S A., vol. 98, no. 14, 3 July 2001 (2001-07-03), pages 7910-7905, XP0002902454 the whole document	1-18
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X	WO 93/06850 A (US HEALTH ; BLOOD RES CENTER (US)) 15 April 1993 (1993-04-15) figure 1; example 2	19-22, 24,25
X	OCKENHOUSE C. ET AL.: "Plasmodium falciparum-infected erythrocytes bind ICAM-1 at a site distinct from LFA-1, Mac-1 and human Rhinovirus" CELL, vol. 68, 10 January 1992 (1992-01-10), pages 63-69, XP0008027974 the whole document	19,25
X	SCHAFREN D.R. ET AL.: "Mouse cells expressing human intercellular adhesion molecule-1 are susceptible to infection by coxsackievirus A21" JOURNAL OF VIROLOGY, vol. 71, no. 1, January 1997 (1997-01), pages 785-789, XP002271630 the whole document	19,20, 24,25
X	GREVE J M ET AL: "MECHANISMS OF RECEPTOR-MEDIATED RHINOVIRUS NEUTRALIZATION DEFINED BY TWO SOLUBLE FORMS OF ICAM-1" JOURNAL OF VIROLOGY, NEW YORK, US, US, vol. 65, no. 11, 1 November 1991 (1991-11-01), pages 6015-6023, XP000615280 ISSN: 0022-538X the whole document	19,24,25
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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/07939

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	YIN ET AL.: "Establishment of a mouse model for human rhinovirus infection" JOURNAL OF GENERAL VIROLOGY, vol. 67, no. 11, November 1986 (1986-11), XP0008027997 the whole document	1
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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP 03/07939

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 29  
because they relate to subject matter not required to be searched by this Authority, namely:  
As far as claim 29 is directed to a method of treatment of the animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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